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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/944,477

Filing Date: August 31, 2001

Appellant(s): TANGE, SATORU

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Michael S Gzybowski  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed June 25, 2004.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) Status of Claims**

The statement of the status of the claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Invention**

The summary of invention contained in the brief is correct.

**(6) Issues**

The appellant's statement of the issues in the brief is correct.

**(7) Grouping of Claims**

The Brief expressly states that claims 1-5 stand or fall together.

**(8) ClaimsAppealed**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) Prior Art of Record**

**(A) Listing of Prior Art of Record**

4,525,407	Ness	6-1985
4,107,364	Sisson	8-1978

5,543,206

Austin et al

8-1986

**(B) Brief Description of Prior Art of Record**

**Ness** suggested that it was known to form an elastic material which was formed by joining an elastic member 10 and a substrate 12 which could be formed from nonwoven materials wherein the elastic member was retractable to its original length after stretching and wherein the substrate material was less extensible than the elastic member (wherein upon stretching the substrate material would have been permanently deformed and would have puckered after the returning of the elastic to its original shape). The joining is in a discontinuous pattern bond. The operation of joining the layers 10 and 12 included the steps of partially stretching the elastic, contacting the partially stretched elastic with the substrate, bonding the elastic to the substrate at spaced points, stretching the bonded assembly an additional amount from the prestretched state, and relaxing the assembly.

**Sisson** suggested in an elastic assembly which included an elastic nonwoven layer and a non-elastic and permanently deformed nonwoven layer would have been joined together and subjected to a stretching operation after the joining operation. Following the stretching operation, the assembly was allowed to relax wherein puckering would have been formed from the permanent deformation of the non-elastic nonwoven layer. The reference suggested that the fibers of the nonwoven layer under such strain during the stretching operation would have been individualized in a manner similar to that claimed.

**Austin et al** taught that it was known at the time the invention was made to join an inelastic nonwoven layer to an elastic layer in a discontinuous pattern of bonds wherein the inelastic nonwoven layer was formed from continuous fibers via a spunbonding operation.

**(10) *Grounds of Rejection***

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ness in view of Sisson optionally further taken with Austin et al.

Ness taught that it was known at the time the invention was made to form a composite elastic which included the steps of providing an elastic material and intermittently bonding the elastic to a nonwoven fabric on both the upper and lower surfaces of the elastic material. The appellant is specifically referred to column 3, lines 8-13 for the intermittent bonding techniques utilized. Additionally at column 3, lines 13-15, the reference to Ness suggested that the substrate which was to be gathered after the lamination operation was formed from nonwoven materials. The reference additionally suggested that prior to the lamination operation, the elastic material was either in a non-stretched or partially stretched condition (column 1, lines 34-37, column 2, lines 17-23, column 4, lines 49-51, claim 14). The reference additionally suggested that those skilled in the art would have stretched the assembly subsequent to the bonding operation (whether one partially stretched the elastic or fed the elastic in an unstretched condition to the laminating mechanism), see column 3, lines 16-36, column 5, lines 24-43. While the reference did not express that the nonwoven was formed from

thermoplastic fibers, the reference clearly envisioned that the nonwoven materials would have been formed from thermoplastic fibers in that the substrates utilized to join to the elastic material were all thermoplastic substrates. Applicant is advised that the thermoplastic material of the substrates is what was used to permit the bonding of the layers together. It is therefore believed that in all embodiments where a nonwoven material was utilized as the substrate that the same was formed from nonwoven thermoplastic fibers.

The appellant takes the position that a nonwoven web in Ness which is "less easily extensible than said elastic member" and which has "less elastic recovery than said elastic" has elastic recovery and therefore does not meet the requirements of the claim as being "capable of inelastic extension". The appellant essentially is arguing that the included materials which had some degree of elastic recovery, just that the elastic recovery was less than the recovery of the elastic material and thus does not meet the requirements of the claims to a material which is capable of inelastic extension.

Appellant is advised that the reference appears to have suggested that the nonwoven materials for the substrate would have included orientable materials (elongatable) which were inelastic (inelastic nonwoven webs would have certainly have had "less elastic recovery" than the elastic webs therein, i.e. they would have had no elastic recovery). It should be noted that in Ness the purpose of the substrate web therein was to facilitate the formation of puckering in the finished assembly. The appellant is advised that those skilled in the art would have known what kind of nonwoven materials would have been

useful for the materials which were less extensible than the elastic webs when making the puckered web. The reference to Sisson suggested suitable materials.

Sisson suggested that it was known to intermittently bond a nonwoven of elastic filaments to a nonwoven of inelastic but elongatable filaments. The reference to Sisson suggested that those skilled in the art would have bonded the nonwoven elastic web 24 with the nonelastic web 22 at cross over points 26 wherein the bonding would have been at discrete locations, see Figure 1. The reference suggested that after formation one skilled in the art would have stretched the web wherein the nonelastic web would have been elongated and oriented as depicted in Figure 2. After retraction of the elastic (contraction) subsequent to elongation, the inelastic filaments 22 loop, bulk and bunch up. See Figure 3, column 13, lines 37-column 14, line 14. The appellant is advised that one viewing Ness would have understood that the nonwoven materials of Sisson would have been useful in the operation as puckering was desired in the finished assembly. Note that the filament web of Sisson is clearly formed of inelastic filaments which are elongatable within the meaning of the term "capable of inelastic extension". Additionally, note that the reference to Sisson suggested that the bonding between the layers would have been discontinuous and/or patterned, see column 30, lines 19-24. The reference additionally suggested that two nonwoven layers would have been disposed upon either side of the elastic web, see column 35, line 67-column 36, line 28. Sisson suggested manufacture wherein independent layers of nonwoven were disposed on an independent layer of elastic material which were separately gathered, bonded together, and then subjected to the stretching operation, see Figure 19 and compare it to Figure

6. Note that in the embodiment of Figure 19 of Sisson the layers were brought together onto the conveyor as separate layers whereas in the embodiment depicted in Figure 6 the layers were brought together and intermixed prior to reaching conveyor 54. More specifically, as depicted with respect to Figure 6 a single aspirator or other forwarding device 52 was used to forward a single layer of the mixed fibers to the conveyor in Figure 6 (column 19, lines 23-33, single unbonded web 60 produced) while in Figure 19 the reference suggested three separate independent aspirators for forwarding the webs onto the conveyor 54 to produce a three layered unbonded web 65 with exterior non-elastic layers and an interior elastic layer. As the reference to Ness suggested the use of nonwoven webs in association with an elastic web which was stretched and then allowed to recover to form a puckered assembly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the nonwoven web of Sisson in the process of Ness for making a textured and puckered elastic composite web. Note that use of this type of nonwoven web (the exterior layers of Figure 19 in Sisson) would have resulted in an assembly after stretching which had the same desired puckering which Ness suggested. Additionally, note that the reference to Ness suggested that one skilled in the art would have desired to utilize the specified nonwoven in the operation and Sisson is merely cited to show what would have happened when one employed the nonwoven material (the individualizing of the filaments in the exterior nonwoven layer of the assembly).

While the reference to Sisson appears to suggest that the filaments would have puckered between the bonds formed between the elastic web and the inelastic web

wherein one would have provided two inelastic layers on either side of the elastic web, the reference failed to expressly suggest that these layers were different in their properties. The reference to Austin clearly expressed the same. More specifically, Austin suggested that those skilled in the art would have known to utilize continuous filaments for the nonwoven layer 11 which was suitably formed via a spun bonding operation and then thermally bonded using conventional processing, see column 3, lines 5-25. The reference additionally suggested that two webs of different properties would have been joined upon opposed sides of the elastic material such as described with reference to webs 11 and 14, see column 3, lines 45-50 for the description of the materials used for the fibers of layer 11 which included blends of polyethylene and polypropylene and column 5, lines 21-40 for a description of the fibers used for the layer 14 which included either polypropylene or polyethylene (but not blends of the polymers). The reference to Austin suggested that subsequent to the stretching operation, the inelastic fibrous webs were stretched beyond their elastic limit and distorted as a result of the same. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ plural webs on either side of an elastic web (to sandwich the elastic there between) wherein the webs were provided with different characteristics in order to attain none but the desired effects as bonding webs on either side was known as suggested by Sisson (and one skilled in the art would have selected materials useful to achieve the desired characteristics in the finished assembly) and the use of different webs on each side of the elastic was known as suggested by Austin et al.

With regard to the individualizing of the filaments, the reference to Sisson clearly suggested the individualization of the inelastic filaments which were not bonded to the elastic web at the cross over points. It should be noted that Ness suggested the removal of the longitudinally disposed bonding between the elastic and the inelastic materials therein, see column 5, lines 33-37.

**(11) Response to Argument**

The appellant argues that Ness fails to teach several of the last steps in appellant's claimed method which involve extending the composite web in one direction within a range that permits elastic stretch and contraction of the first web (the elastic web) and allowing the extended web to retract by an elastic contraction force of the first web to thereby obtain a composite sheet in which individual thermoplastic fibers of the second web are neither fused nor mechanically entangled tightly with each other between discrete areas where the first and second webs are joined together. The appellant is advised that the reference to Ness did in fact suggest that one stretched the composite elastic after formation of the same and allowed the assembly to retract by the elastic force of the elastic web in the assembly in order to form the gathers and/or puckers therein. The reference to Ness additionally suggested that the web which was less elastic (had less elastic recovery than the elastic web) was what formed the gathers or puckers (presumably by being stretched beyond its elastic limit to be oriented and/or elongated in the direction of stretch). The reference to Ness also expressed that the web of less elastic material useful in the operation included nonwoven webs. The only thing lacks from the reference to Ness is what exactly intrinsically would have

happened to the nonwoven web of plastic filaments which was joined to the elastic in the operation. Would the filaments of the nonwoven have become individualized and lacked a bond or mechanical joining between the bond sites of the nonwoven and the elastic. The reference to Sisson was cited to show exactly what one skilled in the art would have expected to have happened to the nonwoven webs of Ness when stretched and allowed to contract in the manner described by Ness. Appellant is advised that one cannot show non-obviousness by attacking references individually where combinations of references have been applied.

Sisson clearly envisioned the application of a discrete layer of non-elastic to a layer of elastic material as envisioned with respect to Figure 19. While it is agreed that the reference to Sisson does not prestretch the elastic material prior to bonding the nonwoven thereto (followed by additional stretching of the assembly), the reference need not expressly teach the prestretching of the elastic web as the reference to Ness suggested the same. The reference to Sisson was cited to show what would have intrinsically have taken place when one bonded the prestretched elastic to the nonwoven and stretched the assembly by an additional amount (note that after joining the nonwoven web to the elastic web in Sisson the composite web was stretched beyond the elastic limit of the nonwoven wherein the nonwoven having the nonelastic fibers therein was stretched and the fibers of the nonwoven of nonelastic fibers were elongated (oriented) during the stretching step). This is what would have happened when one stretched the composite web of Ness where a nonwoven web was used as the less elastic substrate (regardless of whether one prestretched the elastic or not).

The appellant argues that the reference to Sisson did not prestretch the elastic web.

This is agreed with, however as expressed above is immaterial to a finding of obviousness over the applied references for the reasons identified.

The appellant also argues that the reference to Sisson is not relevant to the question of obviousness because only a single layer web was produced (the manner in which the nonelastic fibers were joined to the elastic fibers into a single web is entirely different from having separate webs and joining the same). However this argument is moot in that the appellant is focusing of the embodiment of Figure 6 while the Office is focusing on the embodiment of Figure 19. In Figure 19 (which admittedly included like components to that of Figure 6) the reference to Sisson expressly stated that the resulting web after laying on the conveyor was a three layer assembly (rather than a single web of intermixed fibers of Figure 6). As expressed by appellant in the brief at column 36, lines 28-62 of Sisson the reference stated:

“Accordingly, and with reference now to Figure 19, there is shown and illustrated apparatus generally designed by reference character 30' substantially similar to the apparatus of Fig. 6 but for simultaneously extruding, drawing or drafting and forwarding three distinct streams of filaments to form a three layered unbonded web for bonding and stretching, as by use of the remainder of the apparatus 30 shown in Fig. 6. The apparatus 30' may, more particularly, produce a three layer cloth structure having a relatively elastomeric filament layer laminated between two relatively non-elastic filament layers.” (emphasis added)

Clearly, the nonelastic fiber layers were not mingled with the elastomeric layer in the embodiment of Figure 19 but rather distinct layers were provided. The premise of the rejection is not that one skilled in the art would have selected the entire nonwoven assembly of Sisson in the operation of Ness but rather what would have happened to the nonwoven web of Ness when it was stretched according to the processing of Ness

(where the exterior nonwoven layer of fibers as disclosed in Fig. 19 of Sisson best illustrates what takes place to the nonwoven layer). Appellant takes the position that Sisson only produced a single web of intermixed and randomly dispersed fibers, however this is only the case with Fig. 6 and NOT the case with the embodiment as described with reference to Fig. 19 where three layers were formed, bonded and stretched to produce a three layered cloth structure having a relatively elastomeric filament layer between two relatively non-elastic filament layers.

The appellant also argues that there appears to be no benefit for using the finished bonded cloth of Sisson as the substrate in Ness. Again, appellant is misconstruing the rejection. The reference to Sisson was used to explain what takes place to the separate nonwoven substrate when it was stretched with the bonded elastic in the reference to Ness. It was not to state one was substituting the entire nonwoven assembly of Sisson for the substrate in Ness. Clearly, the use of a nonwoven which was non-elastic in nature relative to the elastic it was joined to was suggested by Ness in the same sense that Sisson suggested the non-elastic filament layers joined to the elastic core. The use of the non-elastic filament layer of Sisson as the nonwoven in Ness would have been obvious as Ness suggested such a nonwoven structure which was gathered or puckered in the finished assembly. Thus, rather than stating that the entire assembly of Sisson is used as the Substrate in Ness, the Office position is that Ness suggested the use of a nonwoven which was nonelastic for the substrate and Sisson suggested a nonwoven exterior layer of a three layered nonwoven which was similar to the nonelastic nonwoven suggested by Ness wherein the reference to Sisson evidenced

what takes place when the stretching takes place (the filaments of the nonelastic nonwoven would have been stretched and oriented and as a result lengthened and upon contraction would have formed gathers and/or puckers and would have been individualized (as Sisson stated the same took place).

The appellant also argues that incorporation of the entire cloth assembly of Sisson as the second substrate material in the processing of Ness would not meet the requirements of the claim as the nonwoven would have already been stretched. However, again, appellant is mischaracterizing the rejection. The rejection is not to incorporate the nonwoven bonded assembly of Sisson in Ness but rather it is to evidenced what would have naturally occurred when a nonwoven fabric material was used as the nonelastic substrate material in Ness. Again as expressed above, there is no incorporation of the cloth of Sisson in the operation of Ness, rather Sisson was cited to show what takes place in the operation of Ness when the nonwoven utilized was less elastic than that of the elastic layer therein (note that the exterior layers of the composite web of Figure 19 of Sisson are nonwoven layers of this nature). If there is any substitution in the rejection, it is merely the substitution of the exterior layers of the composite cloth of Sisson's Figure 19 which are utilized as the nonwoven layer in the operation of Ness. The combination as presented does not fail to teach the claimed invention but rather the step of individualizing the fibers of the nonwoven was believed to be an intrinsic property of the processing of Ness with a nonwoven and the reference to Sisson provided evidence of the same.

The appellant argues that he is not familiar with the Office practice of relying upon an "optional" prior art reference in a rejection and would appreciate a brief comment on its practice. The appellant is advised from the rejection presented it is clear what the rejection is when the reference to Austin was applied in the "optional" sense. There are in fact two rejections being made. One rejection is merely Ness in view of Sisson. The other rejection is Ness in view of Sisson and Austin et al. Note that as expressed above, there are two separate obviousness statements presented, one being the obviousness of the combination of Ness and Sisson and the other being the combination of Ness, Sisson and Austin et al. For simplifying the Office action, the two distinct rejections were presented in a single heading, however, as expressed above, the reference to Austin is only added for additional evidence and is not viewed as necessary to have a *prima facie* case presented without it.

The appellant addresses the reference to Austin and states that the reference to Austin et al requires that there be intermittent bonds B in the non-elastic layer 11 of nonwoven material. The Appellant argues that this intermittent bonding within the layer would not satisfy the individualizing of the fibers of the nonwoven as required by the claims. The appellant is advised that regardless of whether the fibers in Austin et al are tied down with the bonds B, the reference made it clear to one of ordinary skill in the art that as an alternative to a discontinuous fiber (staple fiber) nonwoven a continuous fiber nonwoven web would have been an equivalent art recognized material for the inelastic web which was easily stretched beyond its elastic limit and permanently elongated. The reference to Sisson clearly suggested the use of continuous fibers which were just

simply joined to the elastic layer at the bond points without the use of additional bonds between the individual fibers of the nonwoven web. Applicant is advised that where, as here, two equivalents (a continuous fiber nonwoven or a staple fiber nonwoven) were known to have been interchangeable for their desired function, an express suggestion of the desirability of the substitution of one for the other is not needed to render such substitution obvious, see In re Fout, 213 USPQ 532, In re Siebentritt, 152 USPQ 618. Note that the appellant does not dispute the teachings in Austin that the nonwoven material would have been formed from a different material than the other materials of the laminate in order to provide the desired properties in the finished laminate as needed by the consumer.

The appellant also notes that it is unclear what the use of Austin is in the rejection. As set forth above in the rejection section, there are in fact two rejections presented. The first being the evidence provided by Sisson as to how the nonwoven of Ness would have acted in the operation when using a nonwoven wherein the nonwoven layer of inelastic fibers of Figure 19 in Sisson evidenced how the nonwoven of inelastic fibers in Ness would have acted in the stretching and relaxing operation to individualize the fiber. The second rejection is the combined teachings of Ness and Sisson as addressed above further evidenced by Austin as to the use of a continuous fiber nonwoven for the laminate and the use of different materials for the nonwoven in the assembly. As expressed above and previously clearly explained, there are two rejections of the claims over the prior art, one without Austin et al and one with Austin et al. It is believed that a prima facie case has been established without Austin et al,

however in the event that the additional evidence is needed, Austin et al is additionally cited to provide this information.

It is believed that one skilled in the art would have had the ability to select and utilize knowledge from arts reasonably pertinent to the problem facing him and in doing so would have looked to Sisson and the independent nonwoven layer of fibers formed in the three layer structure therein as a suitable nonwoven material in the operation of Ness.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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September 14, 2004

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